VEGETATION MANAGEMENT PLAN

FOR THE

TOWN OF SOUTHERN SHORES

Prepared by the

Vegetation Advisory Board

In response to the Terms and Conditions of

Town Resolution No. 2005 – 09-01

March 2006

PREFACE

There is uniqueness about the community of Southern Shores: the environmental setting within our borders. Ocean and sound blend in with an amazing diversity of forest and dune vegetation. It is that special aspect that has brought both residents and tourists to acclaim its distinctiveness. Nevertheless, that distinctness shares a similarity with the natural environment. It is just as fragile and it will require a conscious effort by both Council and property owners to recognize and exercise the communal obligations necessary to preserve that characteristic even as development continues to expand

An explicit expression of that effort has been the creation of the Vegetation Advisory Board, originated from the petitions of residents and affirmed by actions of the Town Council. Two previous VAB reports announced an urgency surrounding the adverse impacts of some construction activities and documented, through an ECSU study, the rate of environmental decline.

The VAB has prepared this latest report in order to assist the Council and the residents in adopting a vegetative management plan. The time to act is now and a plan is an indispensable step in developing a meaningful vegetative program to protect, preserve and restore our natural inheritance. Over the last five years, eleven members of the community have served on the Board:

Elsa Edwards
Tony & Lorie DiBernardo
Todd & Gigi Hagenah
Sally Lowe
Rob Milne
Kathy McCullough-Testa
Helen van Laer
Dick Wood (first chairman)
Ursula Zdziarski

For the preparation of this report, special recognition must be given to Rob Milne. His thirty-three year career with the National Park Service provided the VAB and, subsequently, the community with a certain insight into the Outer Banks environmental profile and professionalism about special vegetative problems that can move our community from just awareness about into action over the essential identity of Southern Shores.

Jack Sheehan, Chairman 2006

For The
Town of Southern Shores

TABLE OF CONTENTS

I Introduction 1
A. Authority 2
1. Resolutions
2. VAB
a. Purpose
b. Role
c. Duties
II Vegetation Management Plan
A. The Resource – Natural Vegetation Communities 4
1. Ocean Beach and Foredune Dune 4
a. Ocean Beach
b. Foredune
c. Dune Crest Lee Side
2. Sandy Flats 6
a. Thickets
b. Fresh Water Ponds
c. Landscape Plans
3. High Dunes 8
a. Hollows and Sheltered Areas
b. High Dunes
4. Maritime 9
5. Currituck Sound Shoreline and Ginguite Marsh 12
B. Natural Vegetation Benefits 14
1. Suitability
2. Sand/shore/soil stabilization
3. Reduces Storm Water Problems
4. Diversity
5. Wind and Salt Protection
6. Provides Shade, Privacy and Cooling
7. Economics
8. Appeal
C. Vegetation Management Areas 15
D. Overall Vegetation Management Objectives 15
1. Developed Areas - Public and Private
a. Construction/reconstruction 16
(1) Issues
(2) Objectives

b. Vegetation and Sand Disturbance 17

(1) Issues
(2) Objectives
c. Remediation of Developed Property 19
(1) Issues
(2) Objectives
d. Maintenance (Periodic and Cyclic) 21
(1) Periodic Maintenance
(2) Cyclic Maintenance
e. Vegetation Removal 22
(1) Removal without VAB
(2)Removal with VAB
2. Re-vegetation, Restoration and Landscaping 24
a) General Considerations
b) Determination Process and Procedures
c) Authorization and Enforcement
3. Recreational Space 26
4. Undeveloped Public and Private Open Space 27
5. Public Rights of Way 28

III References i-vii

Appendix I
Appendix II
Appendix III

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I Introduction

The accelerating and continuing trend of destruction of natural vegetation through development and maintenance practices in the Town of Southern Shores adversely affects public and private property. Widespread public concern with this issue was manifested in a property owners' petition[1] to the Town Council. In response, the Town initially created and appointed a Vegetation Advisory Committee (VAC)[2] to examine and address this issue in detail and report to the Town Council.[3] Subsequent observation, vegetation inventory and analysis performed in collaboration with Elizabeth City State University[4], supported by the Town and with grants from NOAA and the North Carolina Department of Urban and Community Forestry[5] documented and detailed this situation. Further data analysis and a minimal response to informational and educational campaigns prompted the VAC to recommend more comprehensive and consistent vegetation management, protection and control methods.

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[1] Resident's Petition initiated by Mr. and Mrs. G. Minck. 2001.
[2] Town Council appoints 7 person Vegetation Advisory Committee 2001.
[3] Vegetation Advisory Committee Report and Recommendations, April 30, 2002
[4] Noble, Elizabeth, Project Director, Department of Geological, Environmental and Marine Sciences Department, Eastern Carolina University, Elizabeth City, NC.
[5] Matching Grant from NC Urban and Community Forestry Dept, February 2003.

A. Authority

1. **Resolutions.** In response to continued loss of natural vegetation and the VAC recommendations, the Town Council promulgated two resolutions: The first Resolution[6] converted the Vegetation Advisory Committee to the "Vegetation Advisory Board" (VAB). Subsequently, the Town Council created and passed a second Resolution[7] to amplify and clarify the VAB's duties and responsibilities. By means of this latter Resolution, the Town of Southern Shores Vegetation Advisory Board (VAB) was assigned responsibilities to monitor, advise and assist in the conservation and management of natural vegetation within the Town.

2. **Vegetation Advisory Board**: The VAB is created to advise on the preservation, maintenance and enhancement of the natural vegetation within the Town of Southern Shores including the area within its extra-territorial jurisdiction. It is to recommend actions, practices, guidelines and regulations required to enhance the growth, restoration and maintenance of natural vegetation, assist in the mitigation of adverse impacts on natural vegetation and to provide information on appropriate practices and formulate controls to remediate natural vegetation disturbances on public and private property.

[6] Appendix I Town of Southern Shores Resolution No. 2005-07-01 July 5, 2005.
[7] Appendix II Town of Southern Shores Resolution No. 2005-09-01-b October 4, 2005

a) Role. The role of VAB is as the name suggests an advisory one with its recommendations subject to approval by the Town Council. Central to the role of the VAB is the preparation and implementation of a comprehensive Town Vegetation Management Plan.

b) Duties. The VAB will participate in reviewing residential and commercial Lot Disturbance Applications, development proposals, plans, contracts and other activities involving the disturbance, removal and management of vegetation within the Town for concurrence with the approved Vegetation Management Plan. Further, the VAB will:

- Advise and make recommendations to minimize adverse impacts on natural vegetation, and to enhance, rehabilitate and manage areas where natural vegetation has been disturbed or removed;

- Recommend, obtain or prepare as required, and continue to make available appropriate informational and educational materials for recommended vegetation management practices and enhancement to property owners within the Town; and,

- Be represented on Technical Review Committees as relevant and appropriate.

The VAB will accomplish these responsibilities in part, through the preparation and application of a comprehensive Town *Vegetation Management Plan* to guide, promote and integrate management

decisions necessary to preserve, restore, maintain and enhance natural vegetation communities on a Town-wide basis. The Vegetation Management Plan will indicate educational, regulatory and other tools or methods for attaining the recommendations of the plan. The Draft Vegetation Management Plan will be subject to public comment during a meeting to be arranged by the VAB, prior to approval by the Council.

II. VEGETATION MANAGEMENT PLAN

A. The Resource - Natural Vegetation Communities (East to West)

The Outer Banks of North Carolina are a dynamic wind-swept chain of mobile sand islands jutting into the Atlantic Ocean and separated from the mainland by wide bodies of brackish sound water. They are subject to high winds, severe seasonal storms, human intervention and rising sea level. Natural vegetation on these barrier islands is an integral part of increasing their stability[8], appeal and value. Five primary vegetation zones or plant communities exist within the Town of Southern Shores.[9] The plants identified are the more conspicuous species and this plan is not intended to be an inclusive listing of plants found within the Town:

- Ocean Beach and Foredune
- Flats and Thickets
- Higher Dunes
- Maritime Forest
- Currituck Sound Shoreline and Ginguite Marsh

1. <u>Ocean Beach and Foredune Dune</u>:

The ocean shoreline and foredune are the primary defense of the Town against storm tides and ocean over wash. Activities that breach or weaken the fore-dune, or reduce the sand available to cyclically

[8] Godfrey, Dr. Paul J, "Comparative Ecology of the East Coast Barrier Islands", Proceedings of the Barrier Island Workshop, Annapolis, MD, The Conservation Foundation 1976.

[9] Brown, Clair A., "Vegetation of the Outer Banks of North Carolina", Coastal Studies Series Number Four, Louisiana State University Press, 1959.

replenish the immediate foredune and its vegetative cover make it more susceptible to erosion. Alternatively, dune height and width may be substantially enhanced and extended with beach grass planting in combination with sand fencing to retain wind transported sand from the ocean beach as has been substantially demonstrated by the efforts of the Civilian Conservation Corps in the late 1930s to construct and reinforce artificial ocean dunes from the Virginia line to Hatteras Village.[10]

a. Ocean Beach: The inter-tidal zone and upper beach lack a stable vegetative community and are subject to considerable seasonal and periodic adjustment to wave dynamics and tidal action. It is a vital asset in the defense of periodic inundation and the protection of the foredune. The open beach is the immediate source of wind and water transported sand, which with entrapment by vegetation gradually builds the fore-dune. The fore-dune widens and narrows seasonally, as well as changes in degree of slope to the ocean. Mechanical removal and redistribution (e.g. beach pushes) of this beach sand asset to benefit individual property owners is a questionable intervention of primarily short-term cosmetic effect and is discouraged.

b. Foredune: Plant colonization of the shoreline along the length of the Outer Banks was assisted by the use of 587 miles of sand fencing, the planting of over 3000 acres of beach grass

[10] Hall, Howard and R. Dolan, 1999

and over 2.5 million primarily native trees and shrubs by the Civilian Conservation Corps in the mid-1930s [11]. The removal of live stock, periodic replanting of beach grasses and the use of fertilizers helped further stabilize and build the foredune to the point where native plants now perpetuate themselves in many areas. A variety of non-woody plants colonize the front[12] and crest of the foredune starting with the "First Stable Line of Natural Vegetation" (FSLNV). Dominant among the wind and salt resistant grasses are: Northern Beach grass (Ammophila breviligulata), a diminishing population of Sea Oats (Uniola paniculata)[13] and to a lesser extent, Saltmeadow Cordgrass (Spartina patens). These perennial grasses have deep intertwined root (rhizome) structures and propagate primarily by the extension of deep root mats, which anchor the plants. The roots of these grasses act much like rebar in cement to hold and stabilize the foredune. The succulent Glasswort (Salicornia sp.) and Goldenrod (Solidago sp.) are commonplace, where grasses and shrubs do not smother them.[14]

c. Dune Crest Lee Side: From the barrier dune crest through the lee side of the foredune, natural vegetation diversity increases with encroaching clusters of woody shrubs. Bayberry and Wax Myrtle thickets (Myrica pensylvanica and M. cerifera.), and Yaupon (Ilex vomitoria) are commonplace and may be interspersed by swaths of Saltmeadow Cordgrass. A

[11] Hall, Howard, R. Dolan et al 1999
[12] First Stable Line of Natural Vegetation ("FSLNV)
[13] Hill, K., Smithsonian Marine Station, 2001
[14] Kraus, E. Jean Wilson, "Guide to Ocean dune Plants Common to NC"1988

variety of vines predominantly Greenbrier (Smilax sp.) and Morning Glory (Ipoma sp.) are intertwined with the woody shrub species often forming dense thickets, which provide critical shelter and habitat for small mammals and birds. In open areas, the Blanket Flower (Gaillardia pulchella) adds color to the natural landscape throughout the summer months. This pattern of mixed vegetation continues and extends through the flat areas behind the foredune with minor variations.

2. **Flats And Thickets**: In sheltered situations and in direct proportion to the increasing distance from the barrier dune, Live Oak (Quercus virginiana), Persimmon (Diospyros virginiana), Bayberry, Wax Myrtle and Yaupon increase across the low-lying areas behind the foredune, which may be periodically inundated by storm surges over, or through breaks in the foredune. In the past, such events left ocean water standing in much of Seacrest Village and in other low lying areas east of Route 12 which killed most of the natural vegetation leaving barren sandy flats. It has taken decades for rain to flush out the residual salt and for the vegetation to recover and partially re-establish itself. The more recent trend toward clear-cutting and land scraping is reversing this re-establishment. A variety of low plants dominated by Saltmeadow Cordgrass are now interspersed between the woody thickets. Prickly Pear Cactus (Opuntia drummondi) is mixed in with the native grasses. Sand Spur (Cenchrus tribuloides), as well as the cactus, discourages

foot traffic through much of this area. Panic grasses (Panicium sp.) are commonplace and assist in stabilizing the sand flats.

a) **Thickets**: Maturing Wax Myrtle, Bayberry, Yaupon and Live Oak thickets now extend throughout this area. An attractive incidental both in the sandy flat thickets and in the maritime forest understory is the spiny "Toothache" tree (Zanthoxylum sp.), which, as the common name suggests, offered a variety of traditional medicinal remedies. It also provides variation in the natural vegetation and an umbrella-shaped appearance in the thickets. Older Live Oaks pre-dating ocean over-wash offer a characteristic low-profile spreading configuration, which provides a substantial windbreak, protection, and shade to residences. With development, the relatively salt-tolerant Japanese Black Pine (Pinus thunbergii) and/or Austrian Pine (P. nigra var. austriaca) have been commonly introduced into this plant community as non-native landscaping trees which may serve as a temporary wind break, but will readily succumb to insect infestations and disease organisms which will kill the trees within months of infection[15]. These are predominately the Turpentine Beetle (Dendroctonus terebrans) that carries the Blue Stain Fungus (Leptographium spp.) and the Pinewood Nematode

[15] "Some Common Pine Diseases in North Carolina", Plant Pathology Extension, NC State University, Raleigh, NC, 2001.

(Bursaphelenchus xylophilus). These organisms are passed from pine to pine unless the dead material is cut and removed. Loblolly pines planted in this area and in the higher dunes are particularly susceptible to browning and needle damage from storm carried salt spray. All woody plants in this area are sheered and flag-shaped by wind and salt spray limiting their height. The woody thickets of this zone are believed to be the precursors of a future Maritime Forest and therefore should be conserved during lot development and sand disturbance.[16]

b) **Fresh Water Ponds**: Most of the ponds in this area are man-made borrow pits where sand has been removed to below the normal high water table for construction and/or drainage. They harbor isolated micro-communities of woody and herbaceous plants at their margins and floating aquatic flora in the deeper water. Low dense growths of Willow (Salix nigra) proliferate along the moist pond margins, trap sediment and produce organic debris as they gradually extend into the pond. Pennywort (Hydrocotyle sp.), rushes (Scirpus sp) and Broad and Narrow Leafed Cattails (Typha sp.), commonly colonize the wet shorelines and shallow fresh water. A variety of algae and floating plants flourish in these ponds during the warmer months, but during extended hot dry periods, may die and decompose rapidly, depriving resident fish

[16] Plants of the Thicket and Maritime Forest, The Assateague Naturalist

of oxygen. A natural progression of these ponds is to gradually accumulate sediment and debris until they fill in completely.

c) **Landscaped Plants**: Many non-native ornamental plants have been introduced as landscape material around structures in the near beach areas and have spread. This practice is not encouraged. Non-native plants are for the most part, ill suited to the harsh near-beach conditions, exposure to salt and/or extreme temperatures and at best, often require excessive maintenance and repeated replacement. Hardy exceptions include the toxic, but attractive Oleander and the tenacious Russian Olive, which spreads rapidly and will invade neighboring properties.

The introduction of lawn grasses to replace the native grass species has unfortunately become increasingly commonplace particularly in the areas of the thickets, flats and higher dunes. Lawn grasses often require the importation of relatively impervious soil from non-local sources, are shallow rooted, may significantly increase runoff contributing to storm water problems and require the almost constant application of water and chemicals and constant cutting to “maintain appearances”. Research shows that natural ground cover “will absorb up to

fourteen (14) times rainwater than a grass lawn".[17] As the latter research was based on findings on Piedmont soil types, the storm water runoff ratio is no doubt even greater on sand-based turf lawns. The chemical treatment of lawn grasses is a significant cause of non-point source pollution of ground water and waterways[18]. As with the lawn grasses, most non-native woody landscaping plants tend to become environmentally stressed, are often vulnerable to insect and salt damage, subject to disease, and require a great deal of costly maintenance while providing only short-term gratification. Native trees, shrubs and grasses used for landscaping are far more successful, functional and provide long-term benefits. Additional bio-retention measures in creating "rain gardens and replacing disturbed native ground cover combined with "low impact development" and "best management practices" are recommended, and have demonstrated the capacity to reduce the volume of storm water run off.[19]

3. **Higher Dunes**: Sand ridges parallel to the ocean follow the wind driven pattern of waves breaking across the width of the Town. These rolling dunes West of Route 12 increase in height as they have pushed westward. The hollows and lower areas between the higher dunes shelter vegetation from prevailing

[17] Georgia Stormwater Management Manual 2001
[18] Center for Watershed Protection, Ellicott City, MD February 2005
[19] Outer Banks Hydrology Management Committee Report of Findings November 2005

winds, salt spray and have a higher water table than the surrounding sand. These natural variations in elevation, topography, exposure and water table, which characterize the middle portion of the Town, dictate the nature, pattern and type of natural vegetative cover found in this zone As with lawn landscaping east of Rt. 158, Lawn grass turf in the higher dunes may cause even more than fourteen times the storm water run off than the native ground cover.

a) **Hollows and Sheltered Areas**: A mix of woody vegetation is found in pockets in the lower more sheltered areas of the dunes. Plant species from both the Sand Flats behind the barrier dune and the Maritime Forest have colonized these areas where they have found favorable conditions, which meet individual growth requirements. Live and Red Oaks and Loblolly Pine are often the larger trees found here. They grow to a height limited by the degree of exposure to wind and salt spray, which trim off the upper branches. A variety of other oaks including Turkey Oak (Q. laevis) dot the "sandscape". Where there is a uniform stand of Loblolly Pine, it is likely that they have been planted, or to have pioneered on disturbed or nutrient-poor sand. As the pines mature and die, a mix of better-adapted and more typical woody shrubs and trees will replace them through time.

b) High Dunes: High dune crests and their upper windward slopes are exposed to harsh environmental conditions. Offshore winds, salt spray swept over the fore-dune and dry shifting sands have minimized the variety of plant species able to survive in this area. Hardy and deep-rooted native shrubs, trees and grasses stabilize the otherwise moving sand. Once established and undisturbed, these plants provide enough shelter to foster additional plant growth. Between clumps of plant material, or where the vegetation has been disturbed or removed, wind will quickly erode the sand leaving bare hollows (sometimes called "blow outs") where it is difficult for plants to reestablish themselves. Throughout much of the Town, the westward side of the high dunes drops sharply into the Maritime Forest, or the Currituck Sound. The abrupt dune slope into the forest is subject to increased instability and rapid erosion when the vegetative cover is removed and not replaced. As in the flats and thicket areas of the town, properties in the dunes landscaped with lawn grass result in higher water run off (up to fourteen times)[20] natural ground cover contributing significantly to storm water run off problems.

4. **Maritime Forest**[21]: The Maritime Forests, once commonplace to low coastal areas and barrier islands of the

[20]Center for Watershed Protection, Ellicott City, MD, April 2002
[21] Bellis, Vincent, "Ecology of Maritime Forests of the Southern Atlantic Coast, National Biological Service, 1995.

Atlantic Coast, were selectively logged for hardwood species, Longleaf Pine, Atlantic White Cedar and Bald Cypress and have become highly fragmented and/or destroyed by development. In the process, the remainder has been made more vulnerable to hurricane events with the opening up of the Maritime Forest canopy. Few mature and diverse remnants of this complex and formerly stable plant community remain. On the North Carolina Outer Banks, only in the Buxton Woods (under management of the National Park Service), the Nags Head Woods (under management of the Nature Conservancy), a portion of the Town of Kitty Hawk Coastal Reserve (Town of Kitty Hawk with NC State Conservation Easement) and in Southern Shores (in predominately private ownership) does this special mature woodland community remain relatively intact. These are among the oldest and more stable portions of the Outer Banks. Maritime Forests provide a diverse refuge for wildlife, storage capacity for ground water and physical stability, as well as providing shelter to residences. Conservation of these woodlands is critical to maintain the quality and character of the Town of Southern Shores.

Within the Town of Southern Shores, the lower and more protected area in the lee side of the high dunes and adjacent to Ginguite Creek contains Maritime Forest. In the shelter of the higher dunes, Oaks (red, white and live), American Beech (Fagus grandifolia), Maples (Acer sp.), Sweet Gum (Liquidambar styraciflua) and several different kinds of

hickories (Carya sp.) are replacing the Loblolly Pines. The hardwoods have formed an interlocking and mutually supportive canopy providing a protective windshield, shade and increased organic nutrients, which foster their reproduction. A wide variety of smaller under-story shade tolerant trees such as American Holly (Ilex opaca), Wild Black Cherry (Prunus serotina), Sassafras (Sassafras albidum) and shrubs such as Beauty Berry (Callicarpa americana) are commonplace in the forested area. In undisturbed and typically heavily shaded areas of the Maritime Forest, plant ground cover is thin and scattered. Through time, the soil incrementally matured with an enriched organic content less favorable to pines and more favorable to deeper woodland plants. Red Bay (Persea borbonia), Laural Oaks (Quercus laurifolia), Water Oaks (Quercus nigra) and Maples (Acer sp.) now grow to a moderate height in moist depressions, as once did Bald Cypress (Taxodium distichum). Individual leftover Bald Cypress trees remain an occasional post-logging occurrence in the wet riparian areas required for seed germination, including the sound waterfront and in former black water pond areas. These trees are well adapted to most forest areas with acid soils and could be increasingly used in residential landscaping within the Forest.

Where the forest floor has been disturbed, nutrients and microorganisms are lost and where the canopy is broken by development or natural events, Loblolly Pines (Pinus taeda) often precede the natural replacement of the hardwoods in, and

along the larger open areas. When the canopy has been opened to increased sunlight by more recent development such as roads and building sites, climbing plants such as Grape (Vitis aestivalis), Poison Ivy (Rhus radicans), Greenbrier (Smilex spp.), Jasmine, Honey Suckle, Virginia Creeper (Parthenocissus quinquefolia) and Trumpet Vine (Campsis radicans) also flourish. The non-native hardy English Ivy readily climbs trees as well. Mats of the more salt-tolerant vines have both positive and detrimental consequences depending on the perspective and situation. On one hand, the vines provide food and protection to a wide variety of birds and mammals as well as reduce soil erosion. However, on the other hand, the more aggressive and hardy climbing vine species add weight and increase the wind resistance of the taller trees (usually Loblolly Pines) increasing the likelihood of storm damage; they also can form dense lower mats stifling a more rapid under-story woody regeneration. Although this is a natural progression, which favors many plant and animal species and curtails erosion, it may warrant a selective management attention in residential areas. Flowering Dogwood (Cornus florida) and Redbud (Cercis canadensis) frequent sunny openings in the forest canopy such as along road alignments and developed property boundaries. Both of these native plants are natural volunteers and frequently used in woodland landscaping. Their use in replacement or restoration of rights of way vegetation in the Maritime Forest portions of the Town is encouraged. Unfortunately since the late 1970s, the Flowering Dogwood has become susceptible to a southward-

moving fatal disease (Anthracnose) and several damaging diseases (Elsinoe corni and Septoria cornicola), which are decreasing the number of dogwoods throughout the area.

The linear north-south “black water” ponds once found between the Maritime Forest and old dune ridges were dredged and connected to create the Town Canal System providing property owners with a prime recreational asset and boating access to the Currituck Sound and Ginguite Creek, while improving drainage from periodic sound-side inundation and storm water run off. Remnants of the black water pond element of the Maritime Forest are found at Cypress Pond and at the northern terminus of the North Dogwood Canal. Lawn fertilizers carried by run off enrich the canal system and contribute to the seasonal algal bloom becoming a more frequent phenomenon; pesticides used in lawn care also contribute to the diminished water quality in the Town canals, the Ginguite Marsh and Currituck Sound.

5. **Currituck Sound Shoreline and Ginguite Marsh:** The shallow and brackish edge of Currituck Sound and Ginguite Creek sheltered by Martins Point promote a border of salt-tolerant wetland plants. In the shallow marsh, the more dominant plants include Black Rush (Juncus roemerianus), and Salt marsh Cordgrass (Spartina alternaflora) with occasional taller intermittent patches of the common reed (Phragmites australis) occasionally found along a disturbed shoreline and/or run off areas.

There is an interesting on-going debate over the latter reed as to whether or not the species has been introduced, or is a native species. The popular press tends to overlook the fact that native Phragmites seeds found on the Atlantic Coast have been dated long before the Colonial period at over 3000 years old. It is likely that Roanoke Island colonists used this native reed to thatch their buildings. In the United Kingdom, Phragmites is currently valued for the bio-treatment of domestic wastewater by filtering and holding nutrients and contaminants. It serves a natural similar function in this locale. While recent DNA studies elsewhere suggest the possibility that genetic contaminants from Europe may have resulted in a more aggressive variant of Phragmites now found in some U.S. locales, no such studies have been made in this area to date. Worldwide, Phragmites australis is a recognized index plant to disturbed and/or polluted areas and simply may be encroaching under circumstances where other native marsh species no longer survive. Mechanical disturbance of the marsh sometimes occurring along with control burning may in fact favor Phragmites growth and attempted herbicide controls may have wider spread effects than intended. Locally, it appears in less than 1-2 % of the marsh and is located in most instances in areas where there has been fill added to the marsh margins or where there is contaminated runoff. For these reasons, any Phragmites control program would be better focused on an eradication of the environmental disturbance factors, rather than attempts to directly control the plant. One of the best preventive

measures has been found is to insure disturbed areas are re-vegetated with appropriate natural ground cover.

Also along the sheltered margins of shallow standing water, both the Narrow Leaf and Broad Leaf Cattails (Typha sp.), as well as Arrow Arum (Peltandra virginica) occur. Arum seeds are often a sought-after food for Wood Ducks. Rose Mallow (Hibiscus sp.), Marsh Mallow (Kosteletzkya virginica) and "Nut Grass" (Cyperus esculentus) are relatively common along the wetland margins, which are also fringed by shrubs including Willows (Salix nigra), Groundsel (Baccharis halimifolia) and Marsh Elder (Iva frutescens). A variety of shrubs and trees are found along the margins of the wetland.

A gradient of semi-aquatic and water-tolerant plants fringe portions of the Maritime Forest and extend the sound shoreline where it is not truncated by dredging and bulkheads. This plant community serves many purposes:

- Protecting shoreline from erosion,
- Filtering residential run off,
- Collecting organic debris,
- Providing food and shelter to water fowl, and
- Serving as an essential nursery for a variety of invertebrates and fish.

The progressive loss of such marshland along coastlines, either through development and/or contamination, has adversely impacted commercial and sports fisheries and accelerated shoreline erosion. Aquatic mammals that frequent the marshes include otter, muskrat, raccoons and the introduced South American rodent, the nutria, which may in fact enhance the marsh for waterfowl in this locale. The North Carolina Coastal Resources Commission rules define Coastal Wetlands as any marsh in the 20 coastal counties (including Dare County) that regularly or occasionally floods by lunar *or wind tides*, and that include one or more of the following plant species[22]:

* *Spartina alterniflora:* Salt Marsh (Smooth) Cord Grass
- *Juncus roemerianus*: Black Needlerush
- *Salicornia spp.*: Glasswort
- *Distichlis spicata*: Salt (or Spike) Grass
- *Limonium spp.*: Sea Lavender
- *Scirpus spp.*: Bulrush
- *Cladium jamaicense*: Saw Grass
- *Typha spp.*: Cattail
- *Spartina patens*: Salt Meadow Grass
- *Spartina cynosuroides*: Salt Reed or Giant Cord Grass

By this definition, Ginguite Marsh is clearly a coastal wetland

[22] CAMA Handbook for Development in Coastal North Carolina, Div. of Coastal Management, NC Dept. of Environment and Natural Resources, Raleigh, July 2005

and subject to relevant State and Federal regulations as well as Town development ordinances.

B. <u>Natural/Native Vegetation Benefits</u>: Both the terms "native" and "natural" vegetation have been used in this plan. "Natural" refers to those undisturbed pre-settlement plant species and plant communities well adapted to their immediate environment on the Outer Banks – the right plant in the right place. "Native" plants refer to those pre-settlement plants species, which may, or may not have been transplanted to their current location. "Non-native" refers to those post-settlement plants not normally found in the places where they now occur, those plants that have been imported from elsewhere, or have been genetically engineered or hybridized. Invasive plants are those that aggressively move in to usually disturbed areas and out compete natural vegetation. Natural vegetation generally has higher benefits than non-native vegetation. Think "Native and Natural" when planting and landscaping.

1. <u>Suitability:</u> Well-adapted to dynamics and conditions of barrier island. Can withstand the high winds and salt-laden environment and are typically drought and disease-resistant. Increased survival rates over non-native plant material when used in landscaping. Require less care, time and treatment.
2. <u>Sand/shore/soil Stabilization</u>: Slows and traps moving sand, builds dunes, stabilizes substrate from wind and water erosion, contributes organic debris and nutrients to enable and enrich soil formation.
3. <u>Reduces Storm Water Problems</u>: Natural vegetation covering

an undisturbed topography breaks the force of water and distributes heavy rains; increases absorption rates and dispersal of storm water. Filters contaminated runoff.

4. Diversity: A heterogeneous mix of natural plant species and ages provides multiple choices of food, shelter and habitat for migratory and resident birds, insects, amphibians, reptiles and mammals. Provides a more diverse and visually attractive place to live.

5. Wind and Salt Protection: Provides protective barriers to high storm winds and modest shelter from wind-blown salt and sand, lowering maintenance costs to homeowners.

6. Provides Shade, Privacy and Cooling: Buildings and residents benefit from vegetative protection from intense summer sun, visual intrusion and many intrusive sounds from roadways and neighbors.

7. Economics: Lowers lot disturbance costs and initial landscaping investment costs, requires less maintenance, conserves fuel and labor; reduced replacement, restoration and care; reduced air conditioning and heating costs reduced by as much as 30% by tree shade and sun shelter[23].

8. Appeal: Provides aesthetic appeal and visual compatibility, diversity and contrast. Increases relative property values (up to 15%),[24] appeal[25] and marketability (e.g. Tree City USA). Reflects environmental appreciation, sensitivity and

[23] National Arbor Day Foundation
[24] National Arbor Day Foundation
[25] National Association of Home Builder's New Home-Buyer Preference Survey, "…must have home features … a lot with trees", The Sentinel, February 22.2004.

considerations.

C. <u>Vegetation Management Areas:</u> Superimposed on the natural pattern of vegetation within the Town is a spectrum of use and ownership situations, restrictive covenants, zoning regulations all requiring special vegetation considerations.

- Residential Developed Properties
- Undeveloped Properties (Public and Private Open Space)
- Designated Recreation Properties (tennis courts, playgrounds, marinas, golf course, beach access parking, other)
- Public Right of Ways and Municipal Grounds (roads, canals, paths, utilities and surrounding municipal structures)
- Developed Commercial Areas

D. Overall Vegetation Management Objectives: Conserve the natural vegetation diversity, function and appearance of the Town of Southern Shores, appropriate to designated use and zoning while avoiding the use of non-native and/or invasive species in landscaping. Upon consideration of merits and values of natural vegetation, owners of private residential and commercial property may continue their respective established landscaping practices and maintenance, but are encouraged to re-vegetate landscapes with appropriate native species characteristic of the local vegetation zone where feasible and not in conflict with primary use. Specific area management issues and objectives follow:

1. Developed Areas (Commercial and Residential) – Public and Private Property. Much of the Town has been developed and individual properties are being redeveloped. This does not preclude a greater emphasis on natural vegetation conservation or the utilization of native plant materials for landscaping as appropriate.

a) Construction/reconstruction:

(1) <u>Issues:</u>

- New construction and reconstruction and their long-term effects are the most significant cause of natural vegetation loss and related storm water runoff problems.

- Vehicles and construction equipment further damage vegetation beyond the structural footprint through contractor requirements, convenience and carelessness.
- The use of septic tank systems requiring drainage fields and repair areas often require additional vegetation disturbance and the removal of woody plants and their roots from the construction site.
- Owners may fail to indicate to contractors prior to site disturbance the specific vegetation they wish to remain undisturbed.
- Town ordinances and their implementation are not at present fully adequate to govern the pre and post disturbance vegetation evaluation process, or consistently control the extent of vegetation loss.
- Restrictive covenants addressing vegetation disturbance have proved ineffective in the many areas where they exist within the Town and do not apply to all properties within the Town.

- Standards, guidelines, and procedures to assist permit application reviewers and property owners protect and conserve natural vegetation have not been developed.
- (***Additional Issues invited***)

(2) <u>Objectives</u>:

- Minimize the immediate and long-term adverse impact of new construction or reconstruction on native vegetation.

- Promulgate requirement for the property owner to submit a vegetation map reflecting the nature and extent of natural vegetation on the property to accompany the Site Disturbance Application.

- Minimize on-site areas allowed for vehicles and equipment used during development to that which is necessary to complete construction within designated setbacks.

- Control wind and water erosion and siltation with barriers (silt fences) erected to reduce collateral damage to

surrounding vegetation (and waterways) and adjacent propterties.

- Leave natural vegetation undisturbed in designated setbacks and in areas exclusive of allowed 30% lot coverage to extent possible and in compliance with Town Ordinances and CAMA requirements as applicable.

- VAB to review vegetation maps and advise on all proposals for site (sand and vegetation) disturbance before the Code Enforcement Officer issues permits. Failure to comply with the above procedures could result in disturbance permit rejection and may be subject to penalties.

- VAB to advise on storm water mitigation measures in connection with planning, site disturbance permitting process and the establishment of model bio-retention water conservation projects.

- Encourage individual property owners to take storm water mitigation measures and

appropriate remedial actions including turf-grass lawn reduction.

- (***Additional Objectives invited***)

b) Vegetation and Sand Disturbance: Document, monitor and assure proposals/plans have minimal acceptable impact on existing vegetation. Prior to disturbance, property owners would be required to submit vegetation maps for approval indicating the occurrence of all individual native trees over 4" DBH, the location and nature of vegetation ground cover and shrubs and the proposed disturbance area within required set backs from surveyed property lines. Upon approval of the development/site disturbance plan, the owner or the owner's representative is to clearly mark native trees larger than 4" DBH outside the construction and septic system footprint, which are not to be disturbed. VAB is to review and advise on all proposals for vegetation and sand disturbance prior to permitting by the Code Enforcement Officer. Site inspections will be made.

(1) **Issues:**

- Construction and/or site disturbance plans and Site Disturbance Applications submitted to the Town, or Community and Homeowners Associations lack site-specific vegetation and topographic maps.

- Current aerial photos or vegetation maps are not typically utilized in site assessment related to evaluate impact of pre and post disturbance of natural vegetation.
- No standards, guidelines or criteria for unacceptable or acceptable impact on natural vegetation have been established for pre and post site disturbance evaluation.
- Without pre-disturbance vegetation maps, guidelines and standards and follow up monitoring, it is not possible to determine the extent of vegetation change.
- Penalties for non-compliance relative to vegetation disturbance have not been pre-determined.
- No formulation has been made for the replacement of natural vegetation after site disturbance.
- Homeowner and Community Association vegetation and sand disturbance Covenants are only applicable to approximately one half of the residential properties in the Town.
- Association enforcement of existing vegetation and sand disturbance Covenants

is hampered by an uneven distribution of these Covenants, and lack standards and criteria.

- No adequate or clear recourse for resolving adverse impacts on adjacent properties.
- Site vegetation and/or sand disturbance issues are not reviewed for adjacent property owner comment unless the site is riparian and/or CAMA related.
- (***Additional issues invited***)

(2) <u>Objectives:</u>

- Increase the amount of natural vegetation left undisturbed during construction.
- Assure greater property owner cooperation and participation in conserving existing natural vegetation.
- Foster greater cooperation with owners, contractors and developers to increase conservation of natural vegetation during site disturbance.
- Foster increased systematic cooperation between Town and ARBs in assessing site disturbance applications.
- Develop standards or criteria and guidelines for consistently assessing

vegetation prior to and after site disturbance.

- • (***Additional objectives are invited)***

c) **<u>Remediation of Developed Property</u>**: Where natural vegetation has been removed in the process of residential or commercial development, compatible restoration is urged to the extent possible.

(1) **<u>Issues:</u>**

- The trend of removing natural vegetation during development is accelerating[26].
- The use of non-native and inappropriate vegetation to replace natural vegetation has increased.
- The already widespread use of lawn grass turf in lieu of natural vegetation for post-construction landscaping is increasing.
- The use of non-native landscaping on municipal grounds, medians and rights of way is prevalent and represents a misleading model to property owners.

[26] Nobel E., Elizabeth City State University/NOAA and Town of Southern Shores <u>Vegetation Survey and Report,</u> August 2003.

- Time, labor and costs could be reduced with diminished manicuring of all right-of-ways.
- Information available to property owners to identify, locate and utilize appropriate native vegetation in landscaping is often ignored.
- Natural/native vegetation is unnecessarily damaged and lost with excessive site disturbance or lack of supervision and/or compliance during construction.
- ***(Additional Issues are invited)***

(2) <u>Objectives</u>:

- Stabilize sand and soil and landscaped properties with suitable native vegetation when feasible in all vegetation zones.
- Restore natural/native vegetation as appropriate and to the extent possible after site disturbance except in designated special purpose areas (e.g. recreation areas, golf course).

- Replace damaged, dead or removed trees and shrubs along right-of-way with suitable well-adapted attractive native plant materials.
- Utilize appropriate well-adapted native vegetation in all municipal landscaping, road medians and rights-of-way
- Increase the use of appropriate native plant materials for post-construction site remediation.
- Replacement of lost natural vegetation ground cover on exposed sand and/or soil to limit erosion can be increased.
- ***(Additional objectives are invited)***

d) **<u>Maintenance (Periodic and Cyclic):</u>** The overall objectives of vegetation maintenance in Southern Shores are to maintain the natural appearance and foster the growth of native vegetation, to restore the diversity of native plants, to reduce labor, time and costs for the ground's maintenance process, and to reduce risks to safety and property.

(1) Periodic Maintenance should occur when localized vegetation conditions are identified as hazardous and it is necessary to remove vegetation to protect life or property

(such as after storm damage) to reduce the risk of fire, to limit the spread of noxious or diseased plants as necessary, and to replace removed plants with suitable native species. Supervised prescribed burns of Ginguite Marsh vegetation may occur periodically to reduce excessive fuel loads with the consent of adjacent property owners.

(2) Cyclic Maintenance should occur on a regularly scheduled and ongoing basis to permit continuous passage as required, maintaining sight lines and preventing encroachment along roads and paths as necessary, to protect utility lines and buildings, and to enhance the appearance and to foster the use of designated recreational areas. Herbicides should not be used on public property.

e) <u>Vegetation Removal</u>: Under certain circumstances, it may be necessary and/or desirable to remove natural vegetation. The Town has instituted a systematic downed wood and vine-chipping program available to homeowners on a rotating basis; wood chips for mulching may be provided from the Town upon request.

(1) Vegetation may be removed *without* VAB review under the following circumstances and/or conditions:

(a) **<u>Diseased, Damaged and Dead Trees</u>:** Diseased, damaged or dead limbs and trees and

shrubs may be cut down and removed and/or chipped with care to respect adjacent property owner's concerns. Diseased and insect infested wood should be removed and not be included in the Town chip distribution program.

(b) **Hazard Trees/limbs:** Leaning or dead trees and dead or hanging limbs may be removed by the property owner, when they constitute a threat to safety or property.

(c) **Obstacles to public passage (roads, canals, pathways and property access):** Trees, limbs and shrubs are to be selectively removed or trimmed, when they block passage, and/or obstruct required lines of sight.

(d) **Vine Maintenance:** Cutting at ground level can effectively kill tree-climbing vines. Hanging dead vines will lose their wind resistant leaves, eventually decay and collapse to the ground without further attention.

(e) **Vista Clearing:** The selective trimming or thinning of vegetation that obstructs vistas of the individual property owners (e.g. the clearing of branches from a view to the water, etc.) is considered part of normal yard maintenance.

(f) **Bush hogging:** Although the practice of bush hogging (mechanical removal of ground cover) is commonplace, it suppresses normal ground cover, small shrubs and tree regeneration. Shrubs and young trees over 3" DBH should not be removed by this practice.

(g) Noxious plants: Nuisance plants such as cacti, sand spurs, poison ivy, thistle and greenbrier can be partially controlled by mechanical means, or by the selective use of recommended herbicides on a plant-by-plant basis, but are difficult to eradicate.

(h) Other items invited

(2.) Natural Vegetation Removal Requiring the Review and Advice of the VAB. Proposals to remove native vegetation in the following situations are to be submitted to the VAB and to the Town Enforcement Authority for consideration and approval prior to vegetation and topographical disturbance. Many Homeowner and Community Association Covenants may have independent compliance requirements for vegetation and sand disturbance.

(a) If all Site Disturbance Applications to the Town for new construction, reconstruction or relocation of structures and/or development

additions were to be accompanied by a vegetation map and site plan indicating the nature, type and location of development and the native vegetation which would be disturbed, it would provide a basis to monitor and conserve natural vegetation. All trees over 4” DBH could be individually located on the proposed site development plan; smaller groupings of plants (e.g. thickets, native grasses) could be named and outlined on vegetation maps.

(b) With vegetation maps accompanying development/disturbance applications, the VAB could make an accurate vegetation assessment and advise the Code Enforcement Officer in a timely manner.

(c) Vegetation disturbance should await affirmative action by the VAB and be subject to obtaining any other required approvals and permits.

(d) Town regulations should be promulgated to schedule penalties for the unauthorized removal of natural vegetation, or vegetation removed without compliance with vegetation stipulations/conditions on the Site Disturbance Permit.

(e) (**Additional items invited)**

f) **<u>Re-vegetation, Restoration and Landscaping:</u>** The overall objective of vegetation management in the Town of Southern Shores is to eliminate the indiscriminate and accelerating loss of native plant species during development through clear-cutting and "sand-scraping". And to promote the restoration of native plant species and natural vegetation diversity on disturbed properties by emphasizing *low impact development* (LID) techniques and relevant *best management practices* (BMP) in landscaping and maintaining properties for greater benefits.

(1) **<u>Native plants</u>**: In all vegetation zones, the native flora is an integral component of the dynamic barrier island ecosystem. Native plants are preferable in the landscaping, vegetation replacement and restoration on public property.

(2) **<u>Well-adapted plants</u>**: The use of native plants for replacement, restoration and landscaping of private property is preferable although well-adapted non-native non-invasive plant species may also be useful on a selective basis. Wind and insect resistant, salt-tolerant, mid-Atlantic coastal plants are recommended. The use of lawn grass turf is not encouraged, except for in perhaps high-use designated recreational areas.

(3) **<u>Sand Fencing on Ocean Beach:</u>** It is highly desirable to have a stabilized foredune along the

oceanfront. In August 2002, new N.C. State Guidelines were adopted for installing sand fences on the ocean side of foredune. Property owners, if they follow certain criteria, may be exempt from Coastal Management Act (CAMA) permit requirements:

North Carolina Recommended Sand Fence Criteria: [27]

- The fencing must be no taller than 5 feet and built from evenly spaced thin wooden vertical slats connected with twisted wire.
- The fencing must be placed as far landward as possible to avoid interference with sea turtle nesting, public access and use of the beach. It must not be placed on the wet-sand beach.
- If fencing is to be placed parallel to the shoreline; it must not be located water ward of the crest of the frontal or primary dune.
- If fencing is to be placed ocean-ward of the crest of the dune, it must be installed at a 45- degree or greater angle to the shoreline. Each section of fence must not be longer than 10 feet, and sections must be spaced at least 7 feet apart.
- Fencing must not extend more than 10 feet beyond either the *first line of stable natural vegetation*, the toe of the frontal or primary dune, or the erosion

[27] North Carolina Dept. of Environment and Natural Resources Web: http://www.nccoastalmanagement.net

escarpment of the dune, whichever is closest to the water.

- Sand fencing to be placed along public accesses may be as long as the access, and may include a 45-degree funnel on the water side. The funnel may extend up to 10 feet beyond the end of the access.

For increased effectiveness in long-term dune stabilization, the planting of beach grasses between rows of sand fencing is highly recommended.

2. **<u>Areas Developed and/or Equipped for Recreational Purposes:</u>**

a) <u>Issues:</u>

- Insuring user safety, visibility, and use for primary purpose intended.
- Maintaining healthy attractive vegetation where it is subjected to and can be maintained despite heavy use.
- Consideration and respect for adjacent property.
- Noxious plants removal
- ***Additional issues invited***

b) <u>Objectives:</u>

- Remove hazardous and noxious plant material in the least adverse manner.
- Maintain and replenish plant material as required with consideration of utilizing desirable plant screening.

- Replace invasive native and non-native plant species using compatible and suitable native species to the extent possible.
- • Remove plant obstacles to visibility and passage along pathways and passages.
- ***Other Objectives invited***

3. <u>Undeveloped Public and Private Open Space:</u>

a) <u>Issues:</u>

- Loss of healthy natural or native vegetation.
- Hazards to adjacent property, safety and obstacles.
- Loss of animal habitat.
- Encroachment by invasive non-native plants.
- Accumulation of tree-climbing vines.
- Noxious plants.
- Natural regeneration of plant species.
- ***Other issues invited***

b) <u>Objectives:</u>

- Minimal management intervention.
- Limit overgrowth of tree-climbing vines as necessary.
- Maintain natural ground cover to extent possible.
- Remove diseased and/or hazard trees and limbs: required on public property; encouraged on private property.

- Enhance natural habitat for birds and other animal life with minimal vegetation disturbance of undeveloped property.
- ***Other objectives invite)***

4. <u>Public Rights of Way:</u>

a) <u>Issues:</u>

- Safety and Visibility.
- Maintenance, labor and fuel costs.
- Protection of assets.
- Maintaining natural or semi-natural appearance while addressing public safety concerns.
- Sheered appearance with overhead and side limb removal.
- Increasing storm water management problems
- ***Other issues invited***

b) <u>Objectives:</u>

- Restore public rights of way to natural or semi-natural state of suitable and low maintenance vegetation within safety and sightline requirements.
- Address safety and visibility concerns.
- Utilize suitable native plant species in landscaping.

- Remove dead and damaged woody plants and/or limbs encroaching, threatening or blocking the right of way, or utilities.
- Increase cost efficiency by minimizing road and pathway shoulder grass cutting along internal roadways.
- Remove fast-growing woody plants from public right-of-way.
- Utilize underground utilities where and when feasible to prevent damage from fallen trees during weather events.
- Provide clear guidance to tree removal and maintenance personnel for achieving naturalized right of ways (no straight edges).
- Reduce storm water management problems utilizing corrective landscaping and native plant ground cover restoration, low impact development techniques, demonstration projects and increased information efforts.
- ***(Other objectives invited)***

III. INFORMATION AND EDUCATION INITIATIVES

The Vegetation Advisory Board will maintain an active effort to provide relevant informational and educational materials primarily for the use of property owners, and will share such materials with other communities concerned for rational coastal vegetation management.

Materials will be available electronically and paper copy. VAB will identify affirmative plant conservation actions projects available to the Town and individual property owners and encourage the use of demonstration projects, bio-retention of storm water activities such as water gardens and harvest, low impact development and best management practices.

A. **Town of Southern Shores Brochures prepared by the Vegetation Advisory Committee.** These following brochures will be periodically refined and updated[28] and converted to electronic availability as well as printed form.

1. "**Trees and Vegetation Benefits":** Itemizes ecological, architectural, monetary, climatic, recreational and social values of vegetation; focus is on native plant species.

2. "**Bush-Hogging Your Lot Before Planning/Building Your Home**": A relatively low cost site clearing approach to property with suggestions for pre-construction preservation of trees and other vegetation.

3. **"Permits and Requirements Prior to Building";** Details the four procedures which must be undertaken before land is disturbed or developed in Southern Shores; CAMA, Town and homeowner requirements are addressed.

4. "**Run-Off and Erosion Mitigation: Driveway/Walkway Materials Options**": Provides a relative comparison of

[28] Vegetation Brochures are available upon request from the Town of Southern Shores offices.

materials commonly used in driveway and walkway construction.

5. "**Bulkheads and Non-Structural Alternatives**": Provides options on how waterfront property owners can protect their property while conserving shoreline, waterways and aquatic habitat.

6. "**Weed Control: Problems and Alternatives**": Weedless gardening saves time and effort. There are alternatives to the heavy use of herbicides and backbreaking hand labor.

7. "**Pesticides and Alternatives**": Non-lethal, non-toxic methods of dealing with many garden and lawn pests are readily available and easy to use; chemical overloading adversely impacts where we live.

8. "**Basic Composting and Mulches**": The Town's sandy soils are generally deficient in organic nutrients and water retention ability; this can be inexpensively remedied. Mulch types are compared along with tips for their use.

9. "**Xeriscaping**": A system of lawn and garden design, planting and water management that evolved in arid lands. Xeriscaping principles apply directly to living and landscaping in Southern Shores.

10. "**References and Information Sources**": A list of references and sources of information on vegetation management and native plant materials appropriate to the Outer Banks.

11. "**Saving Trees During Home Construction**": The Town of Southern Shores has been undergoing an accelerating trend

of the loss of native vegetation assets directly and indirectly due to construction. Some tips on how to minimize this damage during development of your property.

B. **Recommended Additional Actions**: The following are additional informational and educational actions will be undertaken by the VAB as time and budget permit:

1. Review and revise as necessary the existing Vegetation Management Brochures. Upgrade the presentation format and quality to appear more professional and attractive and make them available both electronically and in paper copy.
2. Publish and/or distribute additional informational brochures:
    - Tree City USA Information[29]
    - Vegetation Communities of Southern Shores
    - Natural History of Southern Shores
    - Birds of Southern Shores
    - Common Plants of Southern Shores
    - Tips on Planting in Sand
    - Vine Management
    - Storm Water Management
3. Design and develop a Town Vegetation Website to disseminate information on vegetation conservation and

[29] National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410

enhancement, the Vegetation Management Plan and related subjects.

4. Organize and schedule periodic public meetings initially to obtain comment on the Draft Vegetation Management Plan, and subsequently to provide topical information and expert advice on the use and management of native plant materials.
5. Organize and implement a selection of model vegetation conservation and related storm water management projects on public and private properties to encourage citizen action efforts.
6. Organize and schedule periodic educational seminars in conjunction with local and state agencies and conservation organizations to focus public attention on vegetation and storm water management issues and related remediation opportunities.
7. ***Other suggested actions invited***

IV. Research, review, develop and integrate Town Vegetation Management Ordinances (2006).

A. Survey comparable Town Vegetation Management Plans and Town Ordinances. Consider both regulations and incentives to reach stated objectives.

B**. Identify** relevant examples of issues, controls and remediation.

C**. Seek** legal counsel to draft appropriate Town regulations to more effectively enhance the conservation and maintenance of native vegetation within the community.

D**. Integrate** draft ordinances with existing Town Ordinances to avoid contradiction and conflict.

V. Administration and Budget.

Upon approval of the Draft Vegetation Management Plan, VAB will develop and submit a proposed Budget to the Town Council.

A. VAB Composition and Procedures.

The existing VAB will address anticipated membership needs and composition and make recommendations to the Town Council. VAB will evaluate operational and procedural matters for effectiveness and efficiency and report to the Town Council accordingly.

B. Review and Approval Process

VAB will undertake to review the process for assessment of vegetation disturbance and make recommendation adjustments as necessary.

C. Enforcement and Penalties

VAB will work closely with the Town Manager, Code Enforcement Administrator and Town Council to promulgate appropriate regulatory tools to meet the approved objectives of the Vegetation Management Plan and to develop fair and equitable enforcement guidelines and non-compliance penalties.

D. Develop Program Priorities for 2006

VAB will develop vegetation management program priorities in response to public review and commentary, Management Plan approval and submit draft program priorities together with budget estimates to the Town Council in the first quarter of 2006.

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Appendix I

Town of Southern Shores

6 Skyline Road, Southern Shores, North Carolina 27949
Phone 252-261-2394 | Fax 252-255-0876
info@southernshores-nc.gov
www.southernshores-nc.gov

Resolution

**A RESOLUTION OF THE
SOUTHERN SHORES TOWN COUNCIL
RELATING TO THE CREATION OF THE
VEGETATION ADVISORY BOARD**

WHEREAS, the residents of this community have taken great pride in the unique environmental character and wooded ambient of Southern Shores and have expressed awareness that development can and should maintain the balance of nature in this fragile ecological niche; and

WHEREAS, it is recognized that the Town of Southern Shores is endowed with and characterized by an abundance of diverse, attractive and well-adapted native plant communities, which provide many significant ecological, social and economic benefits to individual property owners, and collectively to the community at large. Not the least of these benefits are storm water mitigation, sand stabilization and erosion control, shelter from wind and storm damage, noise, sun and privacy barriers, wildlife habitat, low cost maintenance, and enhanced property values and quality of life; and

WHEREAS, the citizens of the of Town of Southern Shores have expressed their concerns for the alarming and growing loss of its natural vegetation and the loss of significant values and benefits that the natural plant communities provide, especially through the practice of clear-cutting during the construction process; and

Whereas, in response to citizen concerns the Town Council formed a Vegetation Advisory Committee to study, evaluate and make recommendations to address the issue of the loss of natural vegetation and to provide additional public information about conservation of vegetation on public and private properties; and

Whereas, the Vegetation Advisory Committee, in collaboration with the North Carolina Department of Forestry, Elizabeth City State University faculty and students, the US National Atmospheric and Oceanographic Administration (NOAA) and Town officials, undertook to survey and evaluate the status and condition of the vegetation within the Town, made recommendations and continued to prepare and provide relevant educational

materials to property owners; and

Whereas, the detailed vegetation survey and analysis substantiated a continued and accelerating loss of natural vegetation both on public and private property, a trend toward the use of non-native high-maintenance-cost plant materials in remedial landscaping, or no landscaping at all, and documented a trend to clear cut or completely scrape vegetation from lots prior to development;

Whereas, the Vegetation Advisory Committee has determined, after the development and publication of eleven (11) educational brochures relating to vegetation preservation, building requirements and environmental best management practices and after specific communication with each new private owner of undeveloped property and with owners who are beginning site preparation for a new home, that the educational effort will not have any appreciable impact in preventing the increasing loss of native vegetation;

Therefore, The Town Council of Southern Shores Resolves To:

Mitigate the loss of natural vegetation and maximize the benefits that natural vegetation provides, by continuing to provide educational information to property owners;

Provide and manage natural vegetation in remedial landscaping efforts on disturbed public lands including right of ways while maintaining on-going concerns and taking actions deemed necessary for human safety and property protection;

Refine and enforce, where applicable**,** existing codes and regulations, including those protecting riparian vegetation, establishing set backs, affecting grade and storm water run off and accelerating erosion**;** establish standards for the remediation and/or maintenance of disturbed lands;

Provide appropriate and suitable natural vegetation landscaping on public property.

Examine representative Ordinances found to be effective in other comparable communities to adopt standards for natural vegetation protection, conservation and maintenance to maximize the multiple benefits of natural vegetation within the community during development and redevelopment projects and for the maintenance of public and community association open space.

Establish the Vegetation Advisory Committee as a Board of resident volunteers to assist the Town in the preparation and implementation of a proposed Vegetation Management Plan, examination and preparation of regulatory options for Council consideration, dissemination of public information and collaboration with the Town Code Enforcement Administrator and Community Association Architectural Review Boards to encourage natural vegetation conservation.

II. Adopted this 5th day July 2005

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Hal Denny, Mayor
Seal

ATTEST:

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Carrie Gordin, Town Clerk

Appendix II

Town of Southern Shores

6 Skyline Road, Southern Shores, North Carolina 27949
Phone 252-261-2394 | Fax 252-255-0876
info@southernshores-nc.gov
www.southernshores-nc.gov

Resolution No. 2005-09-01
Version 10-04-2005-b

A RESOLUTION OF THE
SOUTHERN SHORES TOWN COUNCIL
RELATING TO DUTIES OF THE
VEGETATION ADVISORY BOARD

Whereas, the Southern Shores Town Council established the Vegetation Advisory Committee in 2001in response to a citizen initiative to study the apparent loss of vegetation during the development of commercial and residential properties in Southern Shores; and,

Whereas, the Vegetation Advisory Committee submitted three reports on the trends of vegetation loss within the Town, studied alternatives to arrest that loss, developed and provided education materials to builders and property owners on the role of trees and other vegetation within the Town, on made recommendations for moving forward through development of a Vegetation Advisory Board that would be integrated into the Town's policy-making process; and,

Whereas, the Town Council responded to the Committee's reports through establishing goals to attain many of the recommendations submitted and further established the Vegetation Management Board in Resolution No. 2005-07-01; and,

Whereas, the Town Council desires to establish the processes by which the Vegetation Advisory Board shall conduct its work and through which its recommendations shall be reviewed by the Town Council;

NOW, THEREFORE, BE IT RESOLVED that the Southern Shores Town Council does hereby establish the following organization of the Vegetation Advisory Board (herein after referred to as "BOARD"):

1. The BOARD shall be composed of not less than five (5) members who shall be recommended for appointment by the Mayor and appointed by the Town Council. Members shall serve for a six year term and may be appointed for one additional six year term.
2. The Mayor shall recommend and the Town Council shall appoint a chairman of the Vegetation Advisory Board, who shall be a member of the BOARD and shall have the duties and responsibilities of a BOARD member, including the responsibility to vote on

matters coming before the BOARD. The Chairman shall call meetings of the BOARD, shall preside over all meetings of the Board and serve as spokesperson for the BOARD. The BOARD shall appoint a Vice Chairman who shall serve in the absence of the Chairman.

3. The Town Manager shall provide staff and other resources necessary for the BOARD to complete its work, but subject to the Town Manager's professional judgment or to limitations as imposed by the Town Council.

BE IT FURTHER RESOLVED that the BOARD shall undertake the following work:

1. Prepare and recommend to the Town Council a comprehensive Vegetation Management Plan affecting public and private property relating to the appropriate preservation and enhancement of trees and vegetation within the Town, including the area within the extra-territorial jurisdiction of the Town. Such a plan shall include an outline of educational, regulatory and other tools or methods for attaining the recommendations contained in the Vegetation Management Plan. Prior to recommending the Vegetation Management Plan to the Town Council, the BOARD shall conduct at least one (1) public meeting that has been broadly advertised to citizens, property owners, businesses, civic associations, and business trade associations.
2. Prepare and recommend to the Town Council guidelines for the maintenance of the Town rights-of-way so as to accomplish the goals set out in the Vegetation Management Plan.
3. Submit recommendations to the Town Council with education programs and regulatory tools for arresting the vine growth that has become apparent in recent years and what actions the Town Council should take to reduce the proliferation of vines.
4. Review development applications submitted to the BOARD and respond in a timely manner with:
    a. Comments on whether the application is consistent with the Vegetation Management Plan; and,
    b. If not consistent with the Vegetation Management Plan, suggest reasonable changes to application so that it comes into conformity with the Vegetation Management Plan.
5. To the extent a BOARD member is available, participate in lot disturbance inspections. However, the availability or unavailability of a BOARD member shall not decelerate the process for the issuance of a permit.

BE IT FURTHER RESOLVED that the Southern Shores Town Council does hereby direct the following:

1. When a technical review committee is utilized by the Town for review of development applications, such committee shall include the BOARD.

Adopted this 4th day October 2005. _____

Hal Denny, Mayor

ATTEST: S E A L

Carrie Gordin, Town Clerk


SSCA
TOWN